Advancing New Jersey Safety Net ACOs: New Findings on Opportunities for Better Care and Lower Costs

State House Seminar
March 26, 2013

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Presented by Rutgers Center for State Health Policy
Hosted by the New Jersey Office of Legislative Services
Research Supported by The Nicholson Foundation
Acknowledgements

The following individuals contributed expertise and assistance…

Ping Shi of the NJ Dept. of Health, Center for Health Statistics
Daisuke Goto, Jose Nova, Oliver Lontok, Bram Poquette and Dorothy Gaboda of CSHP
Colleagues across the state working toward better care at lower cost
Objective

- Identify opportunities to save hospital costs by improving care in candidate ACO regions within New Jersey

Approach

- Select candidate ACO regions with at least 5,000 Medicaid beneficiaries
  - Camden, Greater Newark, and Trenton
  - 10 other low-income communities
- Examine patterns of hospital utilization
- Estimate potential cost savings from improving care in the community
13 Candidate ACO Regions

Camden*
Greater Newark**
Trenton***
Asbury Park-Neptune
Atlantic City-Pleasantville
Elizabeth-Linden
Jersey City-Bayonne
New Brunswick-Franklin
Paterson-Passaic-Clifton
Perth Amboy-Hopelawn
Plainfield, North Plainfield
Union City-W. NY- Guttenberg-N. Bergen
Vineland-Millville

*Camden zip codes (08102, 08103, 08104 & 08105)
**Newark zip codes (07102, 07103, 07104, 07105, 07106, 07107, 07108, 07112, & 07114)
East Orange zip codes (07017, 07018)
Irvington zip code (07111)
Orange zip code (07050)

***Trenton zip codes (08608, 08609, 08611, 08618, 08629 & 08638)

Source: Kathe Newman, Rutgers University

Medicaid ACO Regions

Source: Kathe Newman, Rutgers University
Measures

• New Jersey Uniform Billing Hospital Discharge Data: 2008-2010
• Five measures of potentially avoidable hospital use among adults living in the 13 regions
  – Avoidable inpatient admissions
  – Avoidable treat-and-release emergency department (ED) visits
  – Inpatient high use
  – ED treat-and-release high use
  – 30-day all-cause readmissions
• Potential cost savings estimated by comparing each community to the region among them with the best cost performance
## Findings: Performance Across 13 NJ ACO Regions

Regions are arranged in order of worst to best performance based on average of individual measure rankings. Rates of avoidable hospitalizations and ED visits are calculated per 100,000 population and are age-sex adjusted. High inpatient use is defined as 4 or more stays over 2008-10 and high ED use is 6 or more visits over 2008-10. High-user rates denote number per 100 hospital users. Readmission rates are 30-day all-cause, age-sex adjusted per 100 index (initial) hospitalizations.

### Rankings: Red Worst three Yellow: Next three Green: Best three

<table>
<thead>
<tr>
<th>ACO Regions</th>
<th>Avoidable Hospitalizations</th>
<th>Avoidable ED Visits</th>
<th>Inpatient High Use</th>
<th>ED High Use</th>
<th>Hospital Readmissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlantic City</td>
<td>3,207</td>
<td>40,876</td>
<td>5.0</td>
<td>12.0</td>
<td>14.2</td>
</tr>
<tr>
<td>Greater Newark</td>
<td>3,098</td>
<td>30,104</td>
<td>4.8</td>
<td>9.0</td>
<td>16.4</td>
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<tr>
<td>Trenton</td>
<td>2,858</td>
<td>34,124</td>
<td>4.6</td>
<td>11.4</td>
<td>15.4</td>
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<tr>
<td>Camden</td>
<td>3,754</td>
<td>51,871</td>
<td>3.9</td>
<td>16.8</td>
<td>14.5</td>
</tr>
<tr>
<td>Asbury Park</td>
<td>2,185</td>
<td>21,486</td>
<td>5.2</td>
<td>8.1</td>
<td>14.2</td>
</tr>
<tr>
<td>Perth Amboy</td>
<td>2,587</td>
<td>23,582</td>
<td>4.0</td>
<td>6.3</td>
<td>13.9</td>
</tr>
<tr>
<td>Jersey City-Bayonne</td>
<td>2,549</td>
<td>18,423</td>
<td>4.6</td>
<td>5.9</td>
<td>14.8</td>
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<tr>
<td>Vineland</td>
<td>2,268</td>
<td>18,912</td>
<td>3.9</td>
<td>6.5</td>
<td>12.4</td>
</tr>
<tr>
<td>Paterson</td>
<td>2,262</td>
<td>19,472</td>
<td>3.9</td>
<td>6.0</td>
<td>13.7</td>
</tr>
<tr>
<td>Elizabeth-Linden</td>
<td>1,830</td>
<td>20,478</td>
<td>3.3</td>
<td>6.2</td>
<td>12.6</td>
</tr>
<tr>
<td>Plainfield</td>
<td>1,839</td>
<td>19,684</td>
<td>3.1</td>
<td>6.3</td>
<td>12.1</td>
</tr>
<tr>
<td>Union City-W. NY - N. Bergen</td>
<td>2,215</td>
<td>15,028</td>
<td>4.0</td>
<td>3.6</td>
<td>12.5</td>
</tr>
<tr>
<td>New Brunswick</td>
<td>1,658</td>
<td>16,827</td>
<td>3.1</td>
<td>5.9</td>
<td>12.5</td>
</tr>
<tr>
<td>13 ACO regions combined</td>
<td>2,504</td>
<td>23,836</td>
<td>4.2</td>
<td>7.7</td>
<td>14.4</td>
</tr>
<tr>
<td>All NJ</td>
<td>1,727</td>
<td>14,177</td>
<td>4.3</td>
<td>5.0</td>
<td>12.7</td>
</tr>
</tbody>
</table>
Rates of Avoidable Inpatient Hospitalizations

2.3 Fold Variation

Rates calculated per 100,000 population

Center for State Health Policy
Rates of Avoidable Emergency Department Visits

Rates calculated per 100,000 population

Center for State Health Policy
Rates of Inpatient High Use

1.7 Fold Variation

Rates calculated per 100 hospital users
Rates of Treat-and-Release ED High Use

4.7 Fold Variation

Rates calculated per 100 hospital users
30-Day All-Cause Readmission Rates

Age-sex adjusted rates per 100 ‘index’ (initial) hospitalizations

Median Region: 13.94

1.4 Fold Variation

Newark: 16.41
Trenton: 15.35
Jersey City-Bayonne: 14.82
Camden: 14.54
Asbury Park: 14.19
Atlantic City: 14.18
Perth Amboy: 13.94
Paterson: 13.75
Elizabeth-Linden: 12.55
UC - W. NY - N. Bergen: 12.49
New Brunswick: 12.47
Vineland: 12.39
Plainfield: 12.12
All NJ: 12.69
High users per 100 hospital users with high inpatient use (IP), high ED use, or both high IP and ED use.
High inpatient use is defined as 4 or more stays over 2008-2010.
High ED use is 6 or more visits over 2008-2010.
The worst performing regions for these three measures are Asbury Park, Camden and Atlantic City.
The best performing regions for the first measure is New Brunswick, and for the remaining two is Union City.
Payer Mix of Inpatient and ED High Users

**Inpatient High Users**
- Self Pay, 4.8%
- Charity Care, 10.9%
- Private, 20.9%
- Medicaid, 10.3%
- Medicare, 51.7%

**ED High Users**
- Self Pay, 3.4%
- Charity Care, 6.1%
- Private, 22.9%
- Medicaid, 5.3%
- Medicare, 60.6%

**Inpatient High Users**
- Self Pay, 21.5%
- Charity Care, 18.4%
- Private, 29.8%
- Medicaid, 16.8%
- Medicare, 10.6%

**ED High Users**
- Self Pay, 20.2%
- Charity Care, 14.5%
- Private, 33.3%
- Medicaid, 13.5%
- Medicare, 14.7%
Demographic Distribution within the 13 ACO Regions

**Inpatient High Users**
- **Gender**: Male, 45.7%; Female, 54.3%
- **Age Group**: 18-39: 13.9%; 40-64: 39.5%; 65+: 46.5%
- **Race/Ethnicity**: White, 28.1%; Black, 42.7%; Hispanic, 20.2%; Other, 9.0%

**ED High Users**
- **Gender**: Male, 35.4%; Female, 64.6%
- **Age Group**: 18-39: 60.0%; 40-64: 34.4%; 65+: 5.6%
- **Race/Ethnicity**: White, 13.9%; Black, 53.0%; Hispanic, 26.0%; Other, 7.1%

*High ED users are more likely to be women, younger, and minority compared to high inpatient users*
### Most Common Principal Diagnoses

<table>
<thead>
<tr>
<th>Inpatient High Users</th>
<th>ED High Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart failure</td>
<td>Other symptoms involving abdomen and pelvis</td>
</tr>
<tr>
<td>Septicemia</td>
<td>Symptoms involving respiratory system and other chest symptoms</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>Other and unspecified disorders of back</td>
</tr>
<tr>
<td>Other forms of chronic ischemic heart disease</td>
<td>Asthma</td>
</tr>
<tr>
<td>Symptoms involving respiratory system and other chest symptoms</td>
<td>General symptoms</td>
</tr>
</tbody>
</table>
High Users with Mental Health and Substance Use Disorders

Percentages represent proportion of high use inpatient stays or ED visits.
Category of Mental health diagnoses includes substance use diagnoses.

13 ACO Regions Combined

- **Inpatient High Users**
  - Mental health: 38.6%
  - Substance use disorder: 20.2%

- **ED High Users**
  - Mental health: 22.5%
  - Substance use disorder: 15.4%
Potential Savings if Performance on par with Best Region

Potential savings (for the 13 regions combined) if each of them achieved rates of best performing region in each of the 5 measures above. Based on 2008-2010 data for area residents regardless of hospital visited. Figures are annualized and adjusted to 2010 dollars using the CPI-Medical Care. **Savings should not be aggregated across all measures due to overlap of populations.**
Regions with Highest Savings Potential

Avoidable Hospitalizations: $93.8 million
- Greater Newark: $35.7 million
- Jersey City: $14.5 million
- Trenton: $9.4 million
- Other Regions: $34.2 million

Avoidable ED Visits: $61.3 million
- Greater Newark: $23.9 million
- Trenton: $10.7 million
- Camden: $9.4 million
- Other Regions: $17.3 million

Inpatient High Use: $284.3 million
- Greater Newark: $119.3 million
- Jersey City: $51.9 million
- Trenton: $27.7 million
- Other Regions: $85.4 million

ED High Use: $70.1 million
- Greater Newark: $23.6 million
- Trenton: $11.9 million
- Camden: $10.5 million
- Other Regions: $24.2 million

Readmissions: $93.8 million
- Greater Newark: $36.8 million
- Jersey City: $17.6 million
- Trenton: $7.8 million
- Other Regions: $31.6 million

All figures are in Millions of 2010 Dollars.
Potential Medicaid Savings if Performance on par with Best Region

Potential inpatient, ED high use, and readmission savings (for the 13 regions combined) if each achieved rates of best performing region. Based on 2008-2010 data for area residents regardless of hospital visited. Figures are annualized and adjusted to 2010 dollars using the CPI-Medical Care. Savings should not be aggregated across measures due to overlap of populations.
Regions with Highest *Medicaid* Savings Potential

- Greater Newark: $33.5 million
- Jersey City-Bayonne: $11.5 million
- Trenton: $6.2 million
- Other Regions: $19.2 million

Inpatient High Use: $70.4 million
ED High Use: $14.3 million
Readmissions: $15.4 million

Millions of 2010 Dollars
How do the ACO communities compare?

• Best performing ACO regions do about as well as overall NJ average

• Compared to NJ overall, on average ACO regions perform worse in…
  – Avoidable ED visits (68% higher)
  – ED high users (56% higher)
  – Avoidable inpatient stays (45% higher)
  – Readmissions (14% higher)
  – Inpatient high use *not substantially different* from statewide average

• Wide variation in performance across ACO regions – shows potential for improvement
  – ED high users (4.7 fold variation)
  – Avoidable ED visits (3.5x)
  – Avoidable inpatient stays (2.3x)
  – Inpatient high use (1.7x)
  – 30-day readmissions (1.4x)
How do the ACO communities compare?

• Substantial savings potential from achieving best performance
  – Highest potential savings from inpatient high users
    • $284 million in 2010 cost reductions across 13 regions overall
    • Cost reductions for Medicaid patients of $70.4 million
    • Greatest potential in Newark, Jersey City, Trenton, Camden
  – But, high behavioral health co-morbidities underscore challenges
Thank You

Complete Findings at
http://www.cshp.rutgers.edu/MedicaidACO

Hospital Utilization Patterns in 13 Low Income Communities in New Jersey: Opportunities for Better Care and Lower Costs